

Nov 19 03 01:51p

NOV 18-2003 15:50 FROM LIBERT & ASSOCIATES

TO 12703386710

P.03/17 P. 2



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Thomas L. Barkley et al : GROUP ART UNIT: 3641
SERIAL NO: 09/863,795 :
FILING DATE: May 23, 2001 : EXAMINER: P. Nelson
TITLE: DETONATING CORD AND METHODS OF :
MAKING AND USING THE SAME : ATTY DKT: P-1659-1

DECLARATION UNDER RULE 132

Commissioner for Patents

November 18, 2003

P.O. Box 1450

Alexandria, VA 22313-1450

RECEIVED

DEC 01 2003

GROUP 3600

Dear Sir:

I, Mark Woodall, hereby declare as follows:

1. I am an inventor of the invention described in the above-captioned U.S. patent application.

Correct 2. My education background includes earning a Bachelor of Science degree from Western Kentucky University in 1987, with a double major in chemistry and biology. I have worked since 1989 in the research and product development of detonating cord and, during that time, have become familiar with the general level of knowledge of those having ordinary skill in this art.

Correct 3. I have reviewed the attached claims for the captioned application, the office action dated June 19, 2003 and the references cited therein.

-2-

4. a. The first cited reference, U.S. Patent 3,995,526 to Shannon discloses a detonating cord having a PETN explosive core. In the manufacture of Shannon's detonating cord, the PETN is fed into a coiled transport tape that has been coated with silicone oil to impart resistance to water.

Correct → b. U.S. Patent 3,338,165 to Minnick discloses a detonating cord having a sensitized nitromethane explosive core. Minnick states that the nitromethane is sensitized by incorporating a finely divided air entrapping material, such as micro balloons, into the nitromethane (see column 2, lines 7-11). It is known in the art that nitromethane like other known reactive liquid, gel and emulsion materials, is significantly deficient in oxygen with regard to its potential performance as an explosive material. Therefore, in order to use nitromethane in a device intended to function explosively, as indicated in the Minnick Patent, it is customary in the art to incorporate into the nitromethane a source of oxygen, either by incorporating an oxidizing agent or, as shown by Minnick, by adding air-containing particles such as microballoons. The purpose for the addition of oxygen to the nitromethane is to enable it to function reliably as an explosive.

suitably for det cord
c. It is known in the art that explosive materials attain detonation without an added source of oxygen. Therefore, there is generally no motive in the art to add oxygen providing particles to an explosive material.

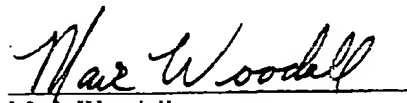
d. U.S. Patent 3,789,759 to Jones discloses the use of detonating cord for forming relief surfaces in concrete. The detonating cord is described at column 3, lines 7-31 and column 5, line 38 through column 7, line 5, as comprising a range of possible high explosive core materials and, optionally, diluents and inerts in amounts up to about 25% (see column 6, lines 7-20), and there may be some low explosive ingredients in amounts up to about 25% (see column 6, lines 21-25). However, nothing in this Patent provides a motive for selecting microballoons as a diluent in

the explosive composition, i.e., there is no indication that the explosive composition of the detonating cord is modified by the addition of diluents or inerts. *The diluents are only mentioned as absorbing agents or carriers. They are never mentioned in regard to modifying ballistic performance.*

-3-

nating cords in the Jones Patent are lacking in oxygen to a degree that a person of ordinary skill in the art would be motivated to employ in the explosive compositions described by Jones et al the air-supplying miniballoons disclosed in the Minnick Patent.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and furthermore that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Mark Woodall